The Columbia River
Improving Water Quality

Idaho DEQ, Oregon DEQ, Washington Dept. of Ecology, and US EPA Region 10
in coordination with the Columbia Basin Tribes
Joint Fact Sheet #5, Fall 2002

Columbia/Snake River Mainstem Total Dissolved Gas (TDG) TMDLs

What is a TMDL?

Federal law requires states to identify sources of pollution (which includes total dissolved gas) in waters that do not meet water quality standards (WQS). States must determine how much pollution the waters can receive and *still* remain healthy – (also called a total maximum daily load or a TMDL). A TMDL defines the maximum allowed pollution for the water body and allocates pollutant "loads" among the sources.

The Columbia River basin covers a huge geographic region, reaching over 1500 miles from the Pacific Ocean on the Washington/Oregon coast to the mountains of British Columbia, Idaho, Oregon and Washington. Amazing regional diversity is present not only in landforms but also in culture, politics and economy. The Columbia/Snake River system harbors threatened and endangered salmon populations and also hosts the most extensive system of hydroelectric power generation in the nation.

Water quality studies have found that TDG levels in the Columbia River exceed the water quality standards established by Washington, Oregon, the Colville Confederated Tribes and the Spokane Tribe of Indians.

Why is total dissolved gas (TDG) a problem?

Total Dissolved Gas (TDG) occurs naturally in all water bodies. Supersaturation of the water column with dissolved gases may result from either natural or manmade conditions. Federal and private dams are a major source of dissolved gas in the Columbia basin.

High concentrations of TDG influence the health and survival of juvenile and adult migratory fish, resident fish and other aquatic life. – gas bubble disease – Spilling of water at dams along the Columbia and Snake Rivers results in high concentrations of TDG. Voluntary spills are made to assist fish passage and for flood control in these rivers. The state's fish populations have declined significantly, and the habitat – the lakes and rivers where the fish live – needs to be healthy homes for the fish populations to recover. Habitat is one of many factors causing the decline in salmon and steelhead populations.

Water Quality Standards

Numeric targets for total dissolved gas that represent achievement of the Oregon, Idaho, Washington, the Coville Confederated Tribes and the Spokane Tribe of Indians water quality standards are a total dissolved gas saturation level of 110% which is not exceeded for river discharges up to 7 day, 10-year frequency flood flows. This criteria will be modeled based on historic records and monitored to ensure that standards are not exceeded for future flows.

Special conditions have been created for voluntary spills from the Columbia and Snake River dams for purposes of fish passage. In Washington these special conditions have been included in the State Water Quality Standards rule, Idaho Department of Environmental Quality may grant variances on a case by case basis, and in Oregon the Environmental Quality Commission has granted variances on an annual basis.

Roles and Responsibilities

An inter-agency steering committee consisting of staff from the Idaho Department of Environmental Quality, the Oregon Department of Environmental Quality, the Washington Department of Ecology and the EPA has been formed to develop the Total Dissolved Gas (TDG) TMDL. A number of Columbia Basin Tribes also participate on the committee. The states will issue final TMDLs for TDG for the parts of the rivers for which they have jurisdiction. EPA will issue the TMDLs for the parts of the rivers that are in Tribal Reservations.

Lower Columbia Total Dissolved Gas TMDL

The geographic scope of the Lower Columbia Total Dissolved Gas TMDL included the Columbia River Mainstem from below the confluence of the Snake its mouth at the Pacific Ocean. Because the Columbia River forms the border between the states of Oregon and Washington, these two states would share the lead on developing this TMDL. The states would work closely with EPA.

In Spring 2002, public comments were solicited and public meetings were held on March 18 in Kennewick, WA, on March 19 in Pendleton, OR and in March 22 in Portland, OR and Vancouver, OR. The final Oregon/Washington Lower Columbia TDG TMDL is scheduled to be completed by September 2002.

Mid-Columbia/Lake Roosevelt and Lower Snake River Total Dissolved Gas TMDL

This TMDL is an extension of the Lower Columbia TDG TMDL. The geographic scope of the Mid-Columbia/Lake Roosevelt Snake River Mainstem TDG TMDL includes the Mainstem Snake River from the confluence of the Salmon River to its confluence with the Columbia River, and the Mainstem of the Columbia River from the Canadian Border to the Oregon/Washington border.

Washington will take the lead on developing the TDG TMDL for the portions of the Columbia and Snake that flow through Washington, and Idaho will take the lead on developing the TMDL for the portion of the Snake that flows through Idaho. EPA will take the lead on developing the TDG TMDL for any river segments that run through tribal lands, induding Lake Roosevelt.

The final Mid-Columbia TDG TMDL is scheduled for completion by June 2003. These work efforts will complement one another and will proceed according to the following timeline:

- Draft Lower Snake TDG TMDL - Fall 2002
- Final Lower Snake TDG TMDL submitted to EPA - December 2002
- Draft Mid-Columbia TDG TMDL - Winter 2003
- Final Mid-Columbia TDG TMDL submitted to EPA - June 2003

For Workshop Materials, Fact Sheets, Documents, Maps and other Information Log onto the Internet at

Http://www.epa.gov/r10earth/columbiamainstemtmdl.htm

Or call

Russell Harding
Oregon Department of Environmental Quality
Portland, Oregon
(503) 229-5284

Mike Herold
Washington Department of Ecology
Lacey, Washington
(360) 407-6434